

REMARKS

The Examiner is respectfully requested to reconsider the final rejections of claims 1 to 6 in the application, particularly as these claims are amended herein and in light of the following comments. Also, regarding the objection to the drawings under 37 C.F.R. §1.83(a) Applicants hereby submit for the Examiner's approval a proposed amendment to Fig. 1 of the drawings which, according to Applicants' file, was previously submitted with the Amendment dated May 14, 1999 and which is believed to overcome the objection under 37 C.F.R. §1.83(a) by correcting erroneous reference number designations in the drawing figure.

The amendments to claim 1, which, due to dependency, are also imputed to claims 2 to 6, more clearly define Applicants' invention as a fluid control apparatus, such as that shown by way of example in Figs. 4 to 6, wherein the apparatus comprises on-off devices 1 and 2 for mass controller 3. The on-off devices 1 and 2 each comprise various assemblages of on-off valves, such as in on-off device 1 the on-off valves 6 and 7. On-off valve 6 is a two-port valve and on-off valve 7 is a three-port valve, the port arrangements for the respective valves being established by the number of ports (and passages) provided in the main bodies 12 and 14 for the respective valves. In order to combine the valves 6 and 7 into a 2-3-type on-off device, the ports, comprising an inlet port and an outlet port for the respective valve bodies, are disposed on the bottom faces thereof and are assembled into operable disposition by means of joint members 30 to 33, member 30 constituting an inflow channel member to valve 6 and members 31 and 33 constituting communication channel members containing internal flow passages 31a and 33a for connecting outlet ports of the respective valves with inlet ports of the main body of valve 7 in the case of passage 31a in joint member 31 and

of the main flow controller 3 in the case of passage 33a in joint member 33 to establish a 2-3-type valve relationship. Joint member 32 is a sub-channel member permitting, for example, process gas discharge from the valve 7.

As is best evident from Fig. 4, the on-off device 2 is a 2-3-3-type on-off device comprising a two-port valve 20 and two three-port valves 16 and 18. The two-port valve 20 possesses elements identical to the two-port valve 12 of the on-off device 1 and the three-port valves 16 and 18 each possess elements identical to the three-port valve 14 of on-off device 1. Likewise, the respective valves 16, 18 and 20 are fluidly interconnected into a 2-3-3-type on-off device by joint members 34 to 39 that correspond to the joint members employed for forming the valves 6 and 7 into the 2-3-type on-off device 1.

According to the invention, therefore, the several kinds of on-off devices can be assembled without the use of tubing from two kinds of valve main bodies, i.e., a two-port type and a three-port type, which are mounted upon identically formed joint members that serve as mounts for the respective valve bodies and to interconnect the valve bodies into the desired flow relationship.

The patents to DuRoss, et al. or Brzezicki, et al., when combined as suggested in the Office Action, fail to teach or suggest the claimed invention. DuRoss, et al. discloses simply a three-port valve construction and is devoid of any suggestion of how such three-port valve is to be combined with a two-port valve in order to create various kinds of on-off devices for use in fluid control apparatus.

Similarly, there is no suggestion in Brzezicki, et al. which would lead to Applicants' claimed invention. Brzezicki, et al., by observation, simply describes a two-port valve employing blocks B designed to mount a valve and to provide a passage from the top of the block to the side thereof so

that, unlike in the claimed device where each joint member is designed to fluidly unite and support two adjacent valves, in Brzezicki, et al. the block simply mounts a single valve member. Also unlike the present invention, each block B of the reference does not contain a passage for fluidly connecting two adjacent valves but, instead, contains a passage for conducting fluid from a valve to an adjacent block B and thence to a valve mounted on such adjacent block.

It is clear, therefore, that the claimed structure is not suggested or taught by the DuRoss, et al. and Brzezicki, et al. patents.

As regards the new rejection of the claims under 35 U.S.C. §112, second paragraph, it is submitted that the claims, as presented, comply with the provisions of the statute. As explained above, the valve mounts comprise channel members 30 to 33 which are shown beneath the respective valve main bodies in Figs. 4 to 6 in the case of on-off device 1 (see page 24, line 19 to page 26, line 7 of the specification.)

As stated in the specification from page 21, line 20 to page 22, line 5 the valve main bodies are attached to the joint members which mount the valves via screws. Thus, the joint members are clearly stated as constituting the elements which mount the valves.

For the foregoing reasons therefore it is submitted that the claims in the application comply with the provisions of 35 U.S.C. §112, second paragraph, and patentably define over the references. The claims, therefore, should be allowed and such action by the Examiner is respectfully requested.


In view of the above, Applicants respectfully request that the Examiner enter this Amendment in the case and pass the application to issue. In the event the Examiner is constrained to retain the rejection of claims 1 to 6 it is requested that the Examiner nonetheless enter the amendments to claim 1 herein in order to place the application in better condition for appeal.

On the other hand, however, if the Examiner finds that minor revision is still required to render the claims satisfactory, it is requested that the Applicants' attorney be called at the telephone number indicated below in order to expedite the changes required to place the application in condition for allowance.

In the event that this paper is not timely filed, Applicants respectfully petition for an appropriate extension of time. The fees for such an extension or any other fees which may be due with respect to this paper, may be charged to Deposit Account No. 01-2340.

Respectfully submitted,

ARMSTRONG, WESTERMAN, HATTORI,
McLELAND & NAUGHTON

A handwritten signature in cursive script, reading "John F. Carney".

John F. Carney
Attorney for Applicant(s)
Reg. No. 20,276

Atty. Docket No. 980150
1725 K Street, N.W., Suite 1000
Washington, DC 20006
Tel: (202) 659-2930
Fax: (202) 887-0357
JFC:ylw